

Claims

Claimed is:

1. A projectile comprising a ballast encased in a binder wherein said binder comprises a resin comprising linear chains of rigid polyamide segments interspaced with flexible poly ether segments and said projectile has a minimum specific gravity of 5.
2. The projectile of claim 1 comprising about 6 to about 66%, by weight, said ballast and about 34-94%, by weight, said binder.
3. The projectile of claim 2 comprising 45-49%, by weight, said ballast and 51-55%, by weight, said binder.
4. The projectile of claim 1 wherein said binder further comprises a second resin.
5. The projectile of claim 4 wherein said binder comprises about 10 to about 30%, by weight, said a resin comprising linear chains of rigid polyamide segments interspaced with flexible poly ether segments and about 70 to about 90%, by weight, said second resin.
6. The projectile of claim 4 wherein said second resin is selected from a group consisting of nylon and polybutylene terephthalate.
7. The projectile of claim 1 wherein said ballast comprises at least one member selected from a group consisting of tungsten, tungsten carbide, molybdenum, tantalum, ferro-tungsten, copper, bismuth, iron, steel, brass, aluminium bronze, beryllium copper, tin, aluminium, titanium, zinc, nickel silver alloy, cupronickel and nickel.
8. The projectile of claim 7 wherein said ballast comprises at least one member selected from a group consisting of tungsten, tungsten carbide, tantalum, molybdenum and ferro-tungsten.
9. The projectile of claim 8 wherein said ballast consist essentially of tungsten.

- 10.(Currently amended) The projectile of claim 1 wherein said projectile has a minimum specific gravity of 10.
11. The projectile of claim 1 wherein said binder further comprises a fiber.
12. The projectile of claim 1 wherein said binder further comprises a lubricant.
13. The frangible projectile of claim 1 further comprising a plasticizer.
14. The frangible projectile of claim 13 wherein said plasticizer is a sulfonamide.
15. The frangible projectile of claim 14 wherein said plasticizer is an aromatic sulfonamide.
16. The frangible projectile of claim 15 wherein said plasticizer is n-butylbenzene sulfonamide.
17. A frangible projectile comprising:
a binder comprising about 10-30%, by weight, a resin comprising linear chains of rigid polyamide segments interspaced with flexible poly ether segments;
a ballast comprising tungsten.
18. The frangible projectile of claim 17 further comprising a plasticizer.
19. The frangible projectile of claim 18 wherein said plasticizer is a sulfonamide.
20. The frangible projectile of claim 19 wherein said plasticizer is an aromatic sulfonamide.
21. The frangible projectile of claim 20 wherein said plasticizer is n-butylbenzene sulfonamide.
22. A frangible projectile comprising:
34-94%, by weight, binder wherein said binder comprises a resin comprising linear chains of rigid polyamide segments interspaced with flexible poly ether segments; and
6-66%, by weight, ballast wherein said ballast comprises at least one member selected from a group consisting of tungsten, tungsten carbide, molybdenum, tantalum, ferro-tungsten, copper, bismuth, iron, steel, brass, aluminium bronze, beryllium copper, tin,

aluminium, titanium, zinc, nickel silver alloy, cupronickel and nickel; and

wherein said projectile has a specific gravity of about 5 to about 14.

23. The frangible projectile of claim 22 wherein said projectile has a specific gravity of at least about 10.
24. The frangible projectile of claim 23 wherein said projectile has a specific gravity of about 11 to about 11.5.
25. The frangible projectile of claim 22 wherein said ballast consist essentially of tungsten.
26. The frangible projectile of claim 22 further comprising a second resin.
27. The frangible projectile of claim 26 wherein said second resin is selected from a group consisting of nylon and polybutylene terephthalate.
28. The frangible projectile of claim 26 wherein said second resin is nylon selected from a group consisting of nylon 6, nylon 6/6, nylon 11 and nylon 12.
29. The frangible projectile of claim 22 wherein said binder further comprises a fiber.
30. The frangible projectile of claim 29 wherein said fiber is an aramid.
31. The frangible projectile of claim 22 wherein said binder further comprises a lubricant.
32. The frangible projectile of claim 31 wherein said lubricant is at least one material chosen from a group consisting of molybdenum disulfide, silicone, polytetrafluoroethylene and mineral oil.